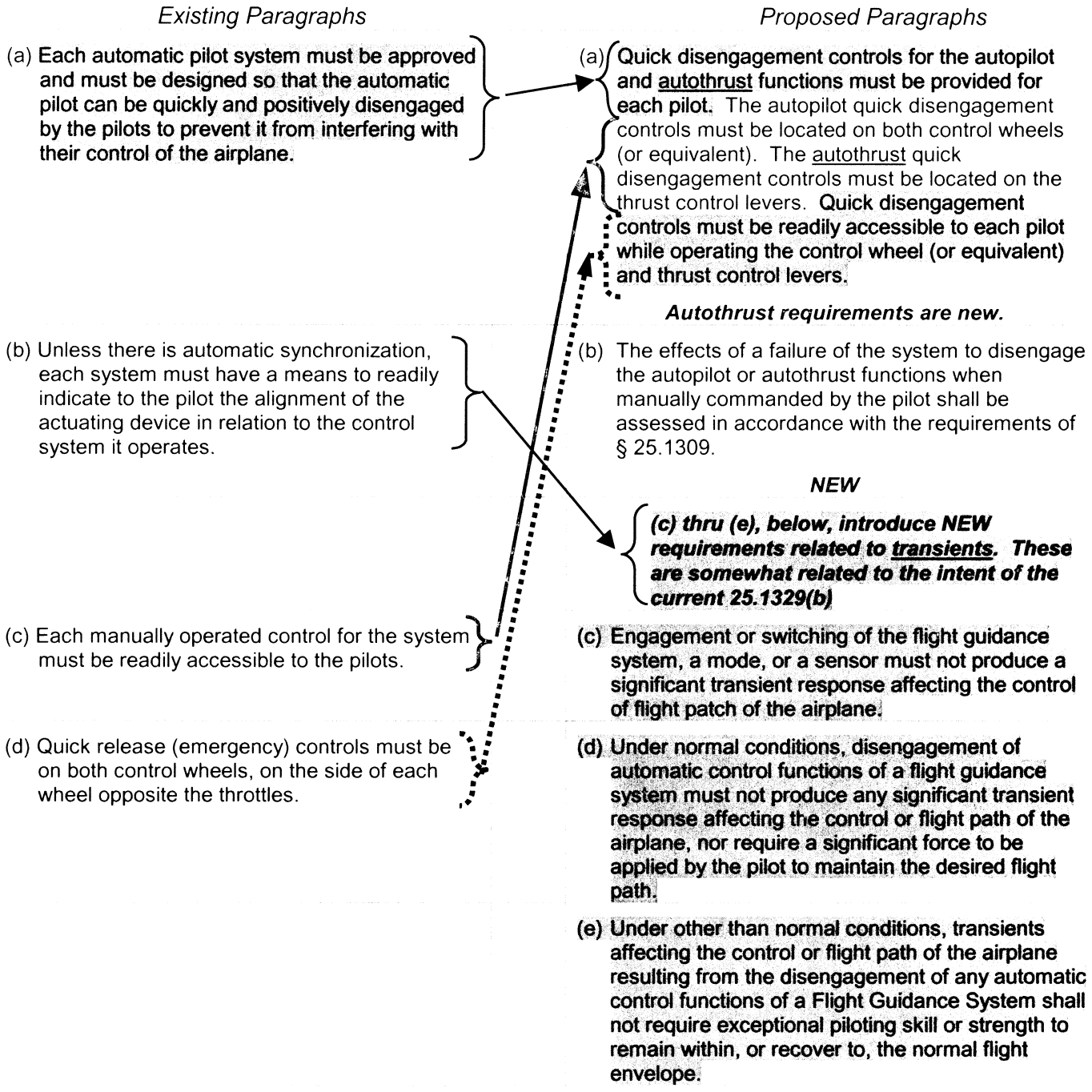
Appendix 2
Graphical Representation – Tracing Between Existing and Proposed § 25.1329 Paragraphs



(e) Attitude controls must operate in the plane and sense of motion specified in Sec. 25.777 (b) and Sec. 25.779(a) for cockpit controls. The direction of motion must be plainly indicated on, or adjacent to, each control.

(f) The system must be designed and adjusted so that, within the range of adjustment available to the human pilot, it cannot produce hazardous loads on the airplane, or create hazardous deviations in the flight path, under any condition of flight appropriate to its use either during normal operation, or in the event of a malfunction, assuming that corrective action begins within a reasonable period of time.

(g) If the automatic pilot integrates signals from auxiliary controls or furnishes signals for operation of other equipment, there must be positive interlocks and sequencing of engagement to prevent improper operation. Protection against adverse interaction of integrated components, resulting from a malfunction, is also required.

(h) If the automatic pilot system can be coupled to airborne navigation equipment, means must be provided to indicate to the flight crew the current mode of operation. Selector switch position is not acceptable as a means of indication.

JAR 25.1329(l)
[(i) A warning must be provided to each pilot in the event of automatic or manual disengagement of the automatic pilot. (See JAR 25.1322 and its AMJ.)]

(f) Command reference controls (e.g., heading select, vertical speed) must operate consistently with the criteria specified in §§ 25.777(b) and 25.779(a) for cockpit controls. The function and direction of motion of each control must be plainly indicated on, or adjacent to, each control if necessary to prevent inappropriate use or confusion.

(g) Under any condition of flight appropriate to its use, the Flight Guidance System must not:

- produce unacceptable loads on the airplane (in accordance with § 25.302), or
- create hazardous deviations in the flight path.

This applies to both fault-free operation and in the event of a malfunction, and assumes that the pilot begins corrective action within a reasonable period of time.

(h) When the flight guidance system is in use, a means shall be provided to avoid excursions beyond an acceptable margin from the speed range of the normal flight envelope. If the aircraft experiences an excursion outside this range, the flight guidance system must not provide guidance or control to an unsafe speed.

NEW

(i) The FGS functions, controls, indications, and alerts must be designed to minimize flight crew errors and confusion concerning the behavior and operation of the FGS. Means must be provided to indicate the current mode of operation, including any armed modes, transitions, and reversions. Selector switch position is not an acceptable means of indication. The controls and indications must be grouped and presented in a logical and consistent manner. The indications must be visible to each pilot under all expected lighting conditions.

(j) Following disengagement of the autopilot, a visual and aural warning must be provided to each pilot and be timely and distinct from all other cockpit warnings

(k) Following disengagement of the autothrust function, a caution must be provided to each pilot.

NEW

(l) The autopilot must not create an unsafe condition when the flight crew applies an override force to the flight controls.

NEW

(m) During autothrust operation, it must be possible for the flight crew to move the thrust levers without requiring excessive force. The autothrust response to flight crew override must not create an unsafe condition.

NEW